

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NEW MEXICO

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CLERK-SANTA FE

STATE OF NEW MEXICO, *ex rel.*  
State Engineer

Plaintiff,

vs.

RAMON ARAGON, *et al.*,

Defendants.

69cv07941 BB-ACE

RIO CHAMA STREAM SYSTEM  
Sections 3, 5 & 7

**STIPULATION ON METHODOLOGY  
USED TO DETERMINE CONSUMPTIVE USE OF CROPS  
IN SECTIONS 3, 5 AND 7 OF THE RIO CHAMA STREAM SYSTEM**

The plaintiff State of New Mexico, *ex rel.* State Engineer ("State") and the following parties: the Gallina-Capulin Acequia Association (representing community ditches in Section 5), the Asociación de Acéquias Norteñas de Río Arriba (representing community ditches in Sections 3 and 7) and the Jicarilla Apache Nation are in agreement on the methodology that should be used to determine the consumptive use of crops in Sections 3, 5 and 7 of the Rio Chama Stream System, and hereby enter a stipulation on methodology as follows:

1. The consumptive use of crops in Section 3, 5 and 7 of the Rio Chama Stream System shall be determined using the U.S. Soil Conservation Service (SCS) Modified Blaney-Criddle Method (See SCS Technical Release 21, published 1967, revised 1970).
2. The SCS Modified Blaney-Criddle Method uses mean monthly air temperatures (T) expressed in degrees Fahrenheit, monthly percentages of annual daylight hours (P)

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based on the latitude of the area under study, monthly consumptive use coefficients ( $k$ ), and length of growing season to estimate the monthly and total consumptive use of water ( $U$ ) or evapotranspiration ( $ETe$ ) during the growing season for a crop that is well-watered and free of disease. The consumptive use in inches for each month is expressed as:

$$U = ETe = [(1) (P) - 100] (k)$$

where  $k = (k_1) (k_e)$ , and where  $(k_1) = 0.01731 - 0.314$  and  $(k_e) =$  crop growth stage coefficient

Adding the consumptive use computed for each month yields the total consumptive use for a specific crop during the growing season. The SCS Modified Blaney-Criddle Method uses the SCS method of estimating effective precipitation (rainfall).

The effective rainfall ( $Re$ ) in inches is expressed as:

$$Re = 0.70917R^{0.8531} - 0.11556 (10)^{0.11254} (F)$$

where  $R$  is the rainfall in inches,  $U$  is the monthly consumptive use in inches, and  $F$  is given as:

$$F = 0.531747 + 0.295164D - 0.057697D^2 + 0.003804D^3$$

where  $D$  is the net depth of irrigation water in inches which is normally applied to the field.

The effective rainfall ( $Re$ ) cannot exceed the consumptive use ( $U$ ). Adding the effective rainfall computed for each month yields the total effective rainfall for a specific crop during the growing season.

3. This stipulation shall have no effect on the determination of irrigation water

requirements in other sections of the Rio Chama Stream System (Sections 1, 2, 4, 6, and 8).

4. This stipulation shall have no effect on previous settlement agreements between any parties, or Orders entered by the Court concerning the irrigation water requirements of any parties, in Sections 3, 5 and 7 of the Rio Chama Stream System, including the partial final judgment and decree on the water rights of the Jicarilla Apache Nation filed April 6, 1998 (Doc. No. 5797).

The State and the parties identified above so stipulate.

DATED April 28, 2005

**State of New Mexico *ex rel.* State Engineer**



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**Jicarilla Apache Nation**

  
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